

## CLAIMS

1. A method of making an optical fiber in which an optical fiber preform is drawn upon heating;

5 said method using a drawing furnace for drawing said optical fiber preform upon heating in an atmosphere comprising an He gas, and using a protecting tube, disposed with a predetermined gap with respect to said drawing furnace, having therewithin an atmosphere comprising a predetermined gas with a thermal conductivity lower than that of said He gas;

10 wherein said gap between said drawing furnace and said protecting tube is a gas mixture layer in which said He gas and said predetermined gas exist in a mixed state; and

15 wherein said drawn optical fiber enters said gas mixture layer at an entrance temperature within the range of 1400 to 1800°C, while said optical fiber drawn by said drawing furnace is fed into said protecting tube by way of said gas mixture layer.

20 2. A method of making an optical fiber according to claim 1, wherein a barrier for separating said gas mixture layer from an outside air is provided;

wherein said barrier is formed with a gas outlet for letting out at least said He gas; and

25 wherein at least said He gas is let out from said gas outlet to said outside air.

3. A method of making an optical fiber according

to claim 2, wherein said barrier is formed with a gas inlet;  
and

wherein said predetermined gas is introduced inside  
said barrier from said gas inlet.

5

[illegible]